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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Akio Saiki

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EXAMINER

PARVINI, PEGAH

ART UNIT

PAPER NUMBER

1793

NOTIFICATION DATE

DELIVERY MODE

07/16/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/823,199	Applicant(s) SAIKI ET AL.	
	Examiner PEGAH PARVINI	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7 and 15-21 is/are pending in the application.
- 4a) Of the above claim(s) 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 25, 2008 has been entered.

Election/Restrictions

Newly submitted claim 21 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: claim 21 recites a method for forming a wear resistant and seizure resistant film whereas the currently amended claims 1-4, 7, 15-19 and the newly submitted claim 20 are all directed to a composition.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 21 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,500,537 to Araki et al. in view of JP 01255798 to Isamu Kobayashi et al.

Regarding claims 1, 15 and 19-20, Araki et al. teach a composition used between sliding parts, such as fuser roller, pressure roller, charging roller, etc. which comprises polyamide imide or polyetherimide resin, a fluorine-containing polymer, such as PTFE (polytetrafluoroethylene) which provides good intercoat adhesive strength, additives, such as titanium oxide which improves said composition, and silane coupling agents, which not only improve mechanical properties but also forms a strong bridge between both organic and inorganic elements used (column 6, lines 19-20, 33-41, 64-67; column 7, lines 1-15; column 13, lines 53-56; column 14, lines 45-50, 55-56; column 15, lines 24-29, 42-44; column 17, 13-14; column 18, lines 9-67; column 22, lines 17-23). Said composition is applied to desired substrates (abstract). Furthermore, Araki et al. disclose that the amount of the fluorine-containing polymer, may be between 5% to 70% by weight, although it generally depends on the intended coating, thickness,

concentration, and viscosity of a coating composition, coating method, etc. (column 14, lines 18-22). Moreover, the reference discloses that the amount of the coupling agent added is from 1 to 50 parts by weight (which is a wide range) of the fluorine-containing material (column 17, lines 42-44).

Araki et al., although disclosing the use of titanium oxide, does not expressly disclose the content of titanium oxide used.

Isamu Kobayashi et al. disclose a composition used for sliding parts containing a thermoplastic resin such as polyamide resin, a slide improver such as a fluoro resin, and 5-50 wt.% of titania having a diameter of 0.2-1 μm (Abstract; translation: pages 6 and 9). Furthermore, Kobayashi et al. disclose that the ratio of titania fibers (i.e. the reinforcing material) depends on the kind of synthetic resin being a matrix; the reference, further, goes on to disclose that the kind of synthetic resin is not limited at all, and for example, thermoplastic resins such as polyamide resins are an example of it (translation: pages 5 and 7).

Therefore, it would have been obvious to one of ordinary skill in the art to modify Araki et al. in order to include an amount of titania (and particle size) as that taught by Isamu Kobayashi et al. motivated by the fact that titania reduces friction coefficient and wear resistance (Isamu Kobayashi et al., page 4, last paragraph). Moreover, it is further obvious that the components are dispersed into the polyamide resin matrix.

With reference to the statement of "wherein the film is obtained by mixing the coating composition by a solvent, applying the mixed composition to the sliding part, and heating the sliding part having the mixed composition applied thereto to cure the

binder resin” as recited in claim 20, it is noted that this is a process limitation in a product claim. The limitations directed to the method for producing the claimed composition are not considered to add patentable weight to the examination of the product claims. It is well settled that if the Examiner can find a product in the prior art that is the same or so similar as to have been obvious, the burden can be shifted to the Applicants to demonstrate that the process for producing the composition somehow imparts a patentable weight to the composition under examination.

With reference to the composition forming a film which is wear resistant and seizure resistant, it is noted that the reference as combined disclose a substantially similar composition as that claimed in the instant application which is used in the same field of art; therefore, said characteristics of being wear resistant and seizure resistant would necessarily follow and would be expected of the composition of the disclosed references absent evidence to the contrary. It should be noted that Araki et al. disclose that their composition is applied on substrates to form films (Abstract; column 16, lines 35-41).

Although Araki et al. do not specifically disclose an amount of polytetrafluoroethylene (i.e. solid lubricant) based on the polyimide or polyamide imide used, it would have been obvious to have utilized an amount of PEFE (polytetrafluoroethylene) which would be within the claimed range motivated by the fact that said reference discloses that the amount of the fluorine-containing polymer such as PTFE used in sliding parts compositions depends on many factors such as intended

coating thickness, concentrations, viscosity of the coating composition, coating method, and more; furthermore, the reference discloses an amount of 5% to 70% by weight.

Even though Araki et al. do not specifically disclose an amount of the silane coupling agent which would be based on the binder resin, the reference discloses a relatively wide range, 1-50 parts by weight, based on the weight of PTFE. Since the amount of PTFE may be any desired and appropriate value based on the factors described above, it would have been obvious to have utilized an appropriate amount of the coupling agent to obtain desired results. Also, considering 1-50 parts by weight of the coupling agent based on PTFE, if taking 5-70 wt% of PTFE, an amount of from 0.05 to 35 wt% of coupling agent is obtained.

It is to be noted that when a number of components are mixed with a matrix, said components are generally dispersed within the matrix and applicants show no evidence otherwise.

Regarding claims 2, 4, and 16, the combination of references as applied to claims 1 and 15, disclose a composition used to form a coat in sliding parts wherein said composition comprises the components as recited in claims 1 and 15.

Isamu Kobayashi et al. disclose using an amount of 5-50 wt% of titania having diameter of from 0.2-1 microns in a composition used for sliding parts as described in details in above (Abstract). Isamu Kobayashi et al. disclose a composition used for sliding parts containing a thermoplastic resin such as polyamide resin, a slide improver such as a fluoro resin, and 5-50 wt.% of titania having a diameter of 0.2-1 μm .

Although the Isamu Kobayashi et al. do not expressly disclose an amount of titania which would be based on the amount of the binder resin used, the reference discloses a range which is wide enough to have overlapping ranges with the one claimed in the instant application regarding the content of titania motivated by the fact that titania reduces friction coefficient and wear resistance as described in details above. The combination of Kobayashi et al. and Araki et al., to teach the amount of titania, is, further, motivated by the fact that Araki et al. disclose the addition of several additives such as titania to said composition to improve many different characteristics such as thermal stability, surface hardness, abrasion resistance, weather resistance and more (column 22, lines 17-23). Even though the Araki et al. disclose the use of titania as a pigment, any other property or characteristics would be expected from this compound motivated by the fact that it is the same compound which is used in the claimed invention; same compounds would be expected to impart same properties.

Regarding claims 3 and 17, as described in details above, Araki et al. disclose that the amount of PTFE used in the compositions for sliding parts depends on the intended coating, thickness, concentration and viscosity of a coating composition, coating method, etc. (column 14, lines 18-23); thus, the amount of PTFE based on the polyimide or polyamide imide to fall within the claimed ranges as recited in claims 3 and 17 would have been obvious.

Regarding claims 7 and 18, Araki et al., as discussed in details above, disclose an amount of from 1 to 50 parts by weight of coupling agent based on PTFE which content may be varied appropriately depending on intended coating thickness, concentrations and viscosity of a coating composition, coating method, and more (column 17, lines 42-44; column 14, lines 18-23).

Response to Amendment

Applicants' amendments to claims 1-4, 7, and 15-19, filed June 25, 2008, pages 2-4, are acknowledged. However, said amendments do not place the application in condition for allowance.

Applicants' amendments to the instant application by inserting the new claim 20, filed June 25, 2008, page 4, are acknowledged. However, said amendments do not place the application in condition for allowance.

With reference to Applicants' submission of new claim 21, it is noted that claim 21 is directed to an invention that is independent or distinct from the invention originally claimed; thus, said claim has been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Arguments

Applicants' arguments filed June 25, 2008 have been fully considered but they are not persuasive.

Applicants have argued that Araki et al. fail to disclose that the fluorine-containing polymer which contains polyimide or polyamide-imide as the binder resin is formed on a sliding part but disclose the application of said compound to a substrate fabricated from polyimide or polyamide-imide.

The Examiner disagrees and, respectfully, submits Araki et al. disclose that the fluorine-containing ethylenic polymer having functional group is applied to a substrate in the form of a coating composition or a film (column 6, lines 47-58; column 13, lines 20-26). In addition, the reference discloses that other additives may be mixed with PTFE; such additives are silane coupling agents, titanium dioxide, and more (column 13, lines 64-68; column 14, lines 1-3, and 45-60; columns 17-18). The reference, further, talks about the thickness of such a coating (column 14, lines 29-33; column 21, lines 20-24). In addition, said reference is drawn to sliding parts.

Furthermore, although instant claim 1 recites that the components (i.e. lubricant, titanium oxide, silane) are dispersed in the binder resin, it is the Applicants' burden to provide tangible evidence as to the criticality of the dispersion of components in the binder resin because Araki et al. teach a composition that comprises polyamide imide or polyetherimide resin, a fluorine-containing polymer such as PTFE (polytetrafluoroethylene) which provides good intercoat adhesive strength, additives such as titanium oxide which improves said composition, and silane coupling agents

which not only improve mechanical properties but also forms a strong bridge between both organic and inorganic elements used.

As defined above, it is to be noted that when a number of components are mixed with a matrix, said components are generally dispersed within the matrix and applicants show no evidence otherwise.

Applicants have argued that Araki's polyimide or polyamide-imide-containing substrate does not constitute a film "formed of a coating composition comprising a binder resin, which is polyimide or polyamide-imide" as recited in Applicants' amendment claim 1.

The Examiner, respectfully, submits the references as combined disclose a substantially similar composition as that claimed in the instant application which is used in the same field of art; therefore, said characteristics of being wear resistant and seizure resistant would necessarily follow and would be expected of the composition of the disclosed references absent evidence to the contrary. It should be noted that Araki et al. disclose that their composition is applied on substrates to form films (Abstract; column 15, lines 23-30, 52-44; column 16, lines 35-41).

Applicants have argued that the Office Action recognizes that Araki does not expressly disclose the amount of PTFE, silane coupling agent, and titanium oxide powder as claimed by Applicants.

The Examiner, respectfully, submits that (as pointed out in the Advisory Action, page 4), that the Office Action mailed on February 28, 2008 stated that Araki et al. do

not specifically disclose an amount of said components based on the polyimide or polyamide imide used.

Nevertheless, as pointed out in that action and the previous Office Action, the amounts as claimed in instant application (i.e. based on polyimide or polyamide imide) are seen to be obvious over Araki et al. or where needed, as detailed out previously, over Araki et al. in view of Kobayashi et al.

Applicants have argued that Kobayashi et al. merely disclose that the resin sliding part itself contains titania fiber and does not disclose that a wear- and seizure-resistant film containing polyimide or polyamide-imide as a binder resin is formed on sliding part.

The Examiner, respectfully, submits that the wear- and seizure-resistance are characteristics and since, as detailed previously and above, the references disclosed a substantially similar composition, said characteristics are seen to have followed the composition of the combined references. Furthermore, as noted above (in the rejection), the reference discloses that the titania reinforcing fibers are dispersed within the synthetic resin, for example, thermoplastic resins, such as polyamide resins by disclosing said resins at the matrix of the fibers.

Applicants have argued that Kobayashi does not teach or suggest that the solid lubricant, the titanium oxide powder and the silane coupling agent [are] being dispersed in the binder resin of the film.

The Examiner, respectfully, submits that the reference discloses that the titania reinforcing fibers are dispersed within the synthetic resin, for example, thermoplastic resins, such as polyamide resins by disclosing said resins at the matrix of the fibers.

Nevertheless, in response to applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 4,724,251 to Rock.

US Patent No. 4,626,365 to Mori.

US Patent No. 6,790,522 to Yamazaki et al.

US Patent No. 6,627,298 to Koyama et al.

US Patent No. 6,524,661 to Bagala et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pegah Parvini whose telephone number is 571-272-2639. The examiner can normally be reached on Monday to Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. P./
Examiner, Art Unit 1793

/Michael A Marcheschi/
Primary Examiner, Art Unit 1793